

# France Report

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### AD plants in operation (estimated by ADEME, 2012) :

- ⤴ On-farm  $\approx 80$  (average of 200 kWe)
- ⤴ Centralised  $\approx 10$  (average of 1 MWe)
- ⤴ Industrial  $\approx 80$
- ⤴ Sewage sludge  $\approx 60$
- ⤴ MSW  $\approx 10$  (4 biowaste & 6 grey waste)
- ⤴ Landfill  $\approx 245$  inc. 90 with energy valorisation

## Consequences of 2011 French electricity and biomethane tariffs

- Strong development of on-farm and centralised plant
- Landfill valorised their biogas in electricity
  - 15 applications/month for electricity contract
  - For the moment, subsidies are still useful
- Valorisation of heat from CHP to dry digestate or wood
- New companies and new technologies on the French biogas market
- More than 300 applications to GrDF, GRTgaz and TIGF (grid operators) to inject biomethane into the grid



Centralised plant AGRIVALOR (Ribeaupillé, Lorraine)  
26 000 tons capacity  
1400 kWe and district heating system for a casino's swimming-pool

## Up-grading plants in operation : a new one !



Methavalor, source separated AD, injection, and CNG  
(Forbach, Lorraine)



CNG filling station (Forbach)



CNG trucks for waste collection (Forbach)

### ↳ *Investment costs (2009)*

- on-farm AD and centralised :

8 600 €/kWe for 100 kWe

5 600 €/kWe for 500 kWe

5 200 €/kWe for 1MWe

- MSW AD : 540 €/t treated

→ **ADEME study 2009**

<http://www2.ademe.fr/servlet/getDoc?cid=96&m=3&id=71199&p1=02&p2=08&ref=17597>

→ **New ADEME study for 2013 on economics data for 50 plants : investment, benefits and costs**



### - Criteria :

- ⌘ < 75 kWe
- ⌘ New technologies and innovation
- ⌘ On farm autonomy

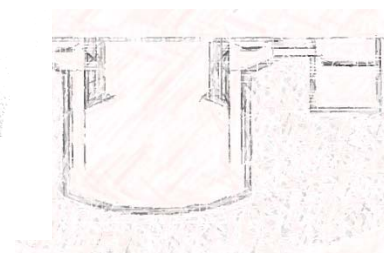
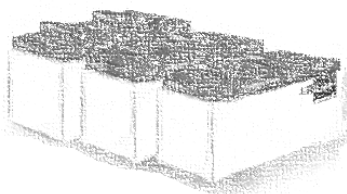
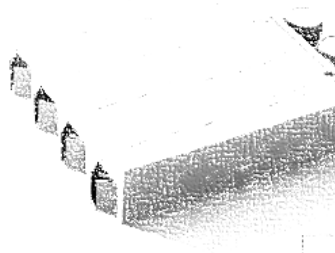
- Subsidies : between 30 % and 50 % of the investment

+ performance evaluation of 1 year by ADEME

- 8 projects selected on 17 candidates

- 2013 Spring : construction of first units and evaluation

<http://www.youtube.com/watch?v=ynSNibF79Z0>



- April to August : ADEME worked on his energy vision
- Substrates : Biowaste, manure, Inter-crops (nitrogen crops), etc.
- 2030 :
  - ⤴ 6 Mtoe primary energy, 70 000 GWh
  - ⤴ 600 plants/years
  - ⤴ 50 % with injection into the grid, 30 % electricity and 20 % heat
- 2050 : 9 Mtoe, 100 000 GWh

